December 14, 1998

Dear Friends:

The N7CFO Keyletter is now on the internet! Actually, it is a modest web page that introduces the publication and has a link for downloading the cumulative index in several word processing formats. It is located at "http://pw1.netcom.com/~n7cfo/n7cfo/welcome.htm". By the time you receive this I will (hopefully) have updated the index to include # 26.

Enclosed (just in time for Christmas) is the winter Morse Express catalog. This is an interesting catalog with lots of goodies and one that will serve as a nice reference in the future. You can view excellent photos of these keys at their website: "www.mtechnologies.com". My guess is that there are now more models of telegraph keys being made than at any other time in history, and this catalog goes a long way toward confirming it. This observation astounds a lot of people, but I take some comfort in the idea that Morse code is a long way from dying!

Speaking of photos, how would you like to have a first class collection of key photographs? One with hundreds of keys shown in good detail and in full color! Would you believe that you can acquire such a collection, absolutely free? If you are on the internet it is easy to download the photos from websites for your private reference library. I have been doing so for several months, and have amassed quite a bunch of photos. On top of that, most photo viewing software will allow you to label the pictures. There are also a lot of good photos on the ebay on-line auction service, though they are often mis-labeled.

If you have Windows 95 it is easy to download photos. When you put the pointer on a web photograph and "right click" a pull down menu will give you a "save picture as" option. From there all you have to do is identify a target folder, name the file, "click", and you are done. I name the files with the manufacturers name and the last name or call sign of the website host. This does a reasonable job of identifying the key, and it is appropriate to give "credit" to the person that posted the photo.

I plan to upgrade my laptop within the next few months, and intend to make up a slide show of keys as an attention getter at swap meets. It will sure help when the old geezers come up and say "I have this funny looking key...."

Speaking of e-bay, I have been keeping a list of key selling prices for the last several months. Such a list would be invaluable if I ever had to make an insurance claim. If you want a copy, send me an e-mail and I will send it to you as an attached file. If you need a hard copy send me a dollar for postage.

Several people asked about the MESCO catalog pages that I did not print in the last issue. I only printed those with telegraphy items - MESCO was a major electrical equipment supplier, and sold everything from quack medical equipment to flashlights. If any of you would like copies of pages covering specific items please let me know. In this issue I am printing several pages from a 1923 Montgomery Wards radio equipment catalog.

I recently acquired a strange little keyer - the "DAH-DITTER", model EK-1. It was manufactured by M&M Electronics, 6835 Sunnybrook, Atlanta, Georgia. This is the only one that I have ever seen. It has a paper label indicating that the serial number is 176. Unfortunately, some dolt drilled a hole in the front of it for a jack, but otherwise it is intact. This keyer was advertised in the February 1968, March 1968, December 1969, and February 1970 issues of QST.

Please check your mailing labels for correct addresses. If your name is highlighted on the label you are due to make a donation.

Echo Press has reprinted the 1852 book *Historical Sketch of the Electric Telegraph* by Alexander Jones. It is available in the U.S. for $22 plus $3 for shipping. A version on acid-free paper is $28.50 plus $3 for shipping. Shipping to Canada is $6, and overseas is $10. Books are mailed 2-3 weeks after the order is received. This is an invaluable reference book that is impossible to find from the original printing, and we all owe Bruce Boston a sincere thanks for reprinting it. Orders can be sent to the following address:

Bruce Boston KD9UL
815 East Third St.
Beardstown, IL 62618

Harry Lewis, W7JWJ, taught my amateur radio novice class about twenty years ago. I recently saw him at a club meeting and he asked if I had information about the "Catlin" method of sending Morse code. I was able to locate a bio of Mr. Fred Catlin (see page 294) in Taltavall's 1894 book *Telegraphers of Today*. The following is excerpted from several e-mails from Harry:

> *I entered the Spokane Radio & Telegraph School immediately after graduating from high school. There I learned shorthand, typing, teletyping, teletype repair, radio repair and more importantly the American Morse, Creed and Continental Codes. My code instructor was a Mr. Ott who was age 65 in 1941. He carefully explained that many telegraphers get a glass arm, but those who learn to send using the Catlin method do not. He did not explain why not. He then showed us the Catlin method, but never explained who Catlin was. Upon graduating some 9 months later my typing speed was around 125 and code speeds around 45 to 50.*
>
> *I obtained a position with Postal Telegraph in Spokane. War had just started and because of my code ability I was transferred to the main west coast terminal in San Francisco located on Market Street. Postal Telegraph was in the process of merging with Western Union. Western Union also owned Mackay Radio. Some of the countries very best code operators worked there. My boss, and wire chief, had been with Postal since 1905. As soon as he saw me send he said, "Good! You're using the Catlin method. Keep it up kid and you'll do OK and never get a glass arm."*
>
> *I observed the best old-time operators were also sending the way I was taught and they also showed me a few tricks on how to hold speed keys and the different methods when different codes were being used. They also commented on my use of the Catlin method. I have never seen the Catlin method described in writing in any telegraph book I've ever seen or read, only references to it. A few years ago I made a video of how to use the Catlin method of sending and used it to demonstrate to my students how the key is held and wrist manipulated. During the last 40 years, other than students that I have taught, I have never met another radio amateur that used this method. I'm now beginning to wonder if I'm the last old geezer alive that uses the Catlin method of sending.*
>
> *While working in San Francisco I also collected a few telegrams that had been messed up. Here are a couple of examples:*
>
> *A lady American Morse telegrapher handed me a message she had received from a depot agent and asked me to follow up. It said:*

"Found a lion under depot giving away. Wire instructions."

In American Morse the T and L are dashes, with the L being the longest of the two. The message should have started: "Foundation--"

When punctuation was put into a message the originating customer paid for it so they frequently left all punctuation out. The receiving telegrapher sometimes would kindly put it back in. This is the way one message was transmitted:

"Dear John Mary not getting any better Come home Sis"

This is the way it was received: "Dear John, Mary not getting any, Better come home. Sis"

Kitano Key Update. One of the benefits of being the owner of a Kitano Key is the annual newsletter. After receiving the 1998 edition I called Kit and we had a long talk about his keys. It sounds like he is having a lot of fun making keys, and we can look forward to more of his innovative designs. The following is excerpted from his December 1998 newsletter:

Another year has slid by and that is a good sign. The Kitano Key Company has had a year which can best be summed up as... lean and interesting. Specifically, the original Kitano Key was granted patent number 5,773,769. This was pretty exciting stuff I since I wrote and submitted the original application and after the first rejection, enlisted the help of a patent agent who finished the application.

Over the past few years, at hamfests, and on the phone, I have often been asked if the Kitano Key Company will ever produce a paddle for those "paddlers" out there. My answer has always been a definitive "yes" and I have had a key in the back of my mind for quite awhile for those who have requested it. Many have said how they enjoy the workmanship and design of my finger keys and so I didn't want to just design another paddle. I wanted to manufacture a paddle with the quality and integrity of our finger keys. The result is a simple, functional, beautiful and an incredibly smooth paddle. In other words, the Kam-key will be a welcome member to our key line.

I started on the premise that I didn't want a spring on the whole thing. So I used magnets repelling each other to provide the tension. And I also decided that ball bearings were the only way to go for the pivot point because they flow like water.

One of the troubles with the actual paddles, is that by making them large and long, a very strange thing happens. You increase the leverage on the base, which makes it move. So, I decided I would not use any paddles whatsoever on the Kamkey. Instead, I use a neoprene or wood rounded half sleeve that fits right over the key arm. There is also another benefit to this design. Since the outside of the sleeve is an arc, you can trip the key by pushing down at 45 degrees instead of the usual 90, which contributes mightily to walking keys. In other words, I wanted hams to be able to operate the key from 45 degrees all the way to 90, depending upon what is comfortable for them. Since the sleeves are not extensions of the key arms, it means the fingers the operate much closer to the base. This also minimizes key walking and the result is a paddle that is both lightweight AND stable, i.e., there is no need for a gigantic base.

The bearings are smaller than a pencil eraser and expensive as all get out. But they are worth every

> *dollar and since there are four of them, two in each arm, one above, one below, they are as smooth as silk. Tension is set at the electrical end by adjusting the cams which in turn move the magnets closer or further apart at the opposite end of the key arm. The gap at the contact point is then set with the cams nearest the neoprene sleeves. It is the reverse of what you would expect, but it is the easiest way to set up the key. Wiring connects to the underside of the key through the thumb screws, (with a wire lug nut and a hex nut) on the cams furthest from the sleeves. This means adjustment requires no screwdrivers or Allen wrenches.*
>
> *The Kamkey will be assembled as the orders are placed, which means it will take 4-5 days before the key is shipped. The price of the Kamkey will be $160, but for Kitano Key owners who are interested, the introductory price will be $140. This offer is good until June 30, 1999. If you have any questions about the Kamkey let me know. Of course they are serially numbered and dated underneath.*
>
> *I will also be developing a straight key, as well as a small non-mechanical finger key for those on the go who want a lighter key than the Kitano key. I have a mental picture of both keys just as I did with the new Kamkey, and the challenge is in making them a reality.*
>
> *The price for the Kitano Key will remain at $95 and the Katahdin at $135. Engraving your call is now $20. And if you want your key buffed or repaired, send it back to me. Cleaning and polishing is $20. REPAIRS ARE FREE. MY KEY'S AREN'T SUPPOSED TO BREAK! If you want to polish your key, just disassemble it, keep track of how many washers go where, etc., and use Brasso. I can also engrave a plaque with your call on it if you like for $30. All shipping and handling is $5. If you send cash or check, and $7 if you use Mastercard or Visa.*

I sent out an internet enquiry about the ubiquitous U.S. Navy "Stirrup Key". I have examples made by Bendix, Telephonix and Bunnell. **Doug Seneker** had the following reply:

> *I have one marked on top, "BENDIX RADIO CORP. TYPE MT-11B". In less legible stamping, also on the little box covering the terminals, "Ref. No xxxxx (illegible)". Underneath is a silver colored circular stamp with a design in the center resembling a shield. It is a rubber-stamp sort of thing like the red signal corps stamps. I got this key from Dick Howe, a ham from Isabella, Missouri for a J-38. Dick got it at the Jappa Road Bendix plant in Towson, MD after it was returned by the military for some reason (he liberated it) while he worked for Bendix. He said this type key was originally designed for use with the BC639/638 rack-mounted 50 watt radio. He said he also used a key of this type when serving as a radio operator on a C-47 Goonie Bird during the Korean War, as a tech-rep in uniform for Bendix and Philco. So, not all of them were sent to the Navy as a "Key Signaling Totally Enclosed Type 26003A", though I have some of those too. Murray Willer verifies their use to operating signaling lamps. I guess you noticed Ebay had another one with the white stamping around the knob skirt with the 2-minute warning. I don't have any with that warning, though I have a Bunnell CJB26003A (Navy code). Yes, there are some things we don't know about this key.*

Derek Cohn referred me to the web page for Leach International Corporation. They had a nice biography of Val Leach, inventor of the Leach Relays and maker of the Leach Speedoplex. I wrote to Leach International, and they kindly granted me permission to reprint the following:

> *Val Leach, 1895-1941. When "Val" Leach conceived his idea for a break-in relay, little could he realize that the company that now bears his name would become the acknowledged leader in aerospace switching components.*

It was in San Francisco shortly after World War I when Leach, who had been a U.S. Navy telegrapher, conceived the idea of the break-in relay. Like most radio operators, he had become annoyed at the erratic nature of contemporary radio equipment.

A telegrapher sending a message from ship to shore, for example, had no way of knowing whether his message arrived legibly or garbled until the receiver took his turn sending at the end of the transmission period. To solve the problem, he devised a relay that, for the first time, enabled a receiver to "break-in" on the sender and say something like the code equivalent of "your message is garbled, start over again."

A few months after his discharge from the Navy, Leach perfected his relay design. The year was 1919 - days of high enthusiasm but low finances for Val. He would go aboard ships and sell his wondrous gadgets to other operators for food money. For several years, Leach operated his business on a part time basis in his apartment house on the east side of San Francisco while occupying a position as a maritime inspector.

Among the first companies to recognize the greatness of his invention was the Radio Corporation of America. When sales volume increased, Leach opened a shop on Mission Street and began devoting his full time to the relay business. In 1929, he moved to Los Angeles where manufacturers like Douglas Aircraft found that Leach relays not only worked but stood up to the rugged requirements of aircraft where life could depend on an electrical contact that functioned. A reputation for quality and reliability was born that Leach never relinquished.

In October 1941, less than two months after incorporating as Leach Relay Company, Inc., Val Leach was killed in a tragic automobile accident, ending one of the nation's most promising careers in electronics. Without benefit of an engineering degree or even a formal high school education, Val Leach advanced two-way radio communications and relay technology - a truly remarkable individual and pioneer for the relay industry.

Tom Perera: *I am offering reproduction Lionel J-36 Labels FREE on the internet in my museum in the section on bugs in downloadable and printable files which can be printed out on a good printer, sealed in plastic, and pinned or glued onto the J-36 base. You will find two files there, a medium resolution file and a very high resolution file for those with good high dpi printers. There is also a full-size and copyable or cut-outable label in my collector's guide. It all that is too much trouble, I offer to send a fairly good copy of one sealed in plastic in return for $5 in cash and an SASE. It comes with an unconditional money back guarantee and can be returned for refund if not happy.*

Steve Fried: *...I went downtown (Chicago) to look for the old TAC buildings. I did manage to find the Huron Street building. Took some pictures and went in to see if anybody was old enough to remember TAC. Didn't do so good in that regards. Next, went to the Spring Street address. Unfortunately, that building now is gone and replaced by route 290. I took a few pictures of the street sign just for the heck of it. Next, went to the main (rather huge five floors of solid books) Chicago Public Library and bombed out there too. Nothing on TAC. So that is the "start" of my search. Next I guess is ads in local newspapers, etc., to dig up a body who may have worked there.*

On another subject: What is a Gardiner Levering "Robot Radio Key"? It is a box (black crackle, of course) with what looks like two keys side by side. You ever hear of it or see one? Is it an electronic keyer of some sort? It looks like something to sit next to my Mon-Key!

> *I also just obtained a 20" (square) self winding Western Union Telegraph clock. I'm told all the info I need for this is in "American Clocks" volume 2, by Tran Duy Ly (Arlington Book Company). So I will be good on the WU clock (made by Self Winding Clock Company of Brooklyn NY) but I also need more info on Postal Telegraph clocks.*

I'm glad to hear about the research - please keep us posted if you come up with anything. Every little bit helps! As for the Gardiner-Levering, the first information I have on them is from an ad in the 11/36 QST. I have a total of 111 ads in the database for them and "Gardiner & Co.". Gardiner-Levering advertised from 11/36 to 2/42, so I would place yours in that time frame. Gardiner & Co. advertised until 9/65, though they sold a practice machine, not the Robot Key. A copy of the 11/36 Robot ad is on page 193 of Keyletter # 18.

As for the clocks, I don't have a lot of information, but I'll share what I have. They are a nice item, and it is amazing how many of the Postal Telegraph clocks have survived. All that I have seen were made by the Hammond Clock Company. I have a nice 17" model in working shape and I also have a 20" model that needed some repairs when I got it. If you ever have to take one apart, be VERY careful of the bezel and the glass. The minute hand on mine came loose, and I figured that it just had to be pressed onto the shaft. To get to the hand I had to remove the bezel, and that is where the fun began! I took the back off and discovered that the bezel is held down with six metal tabs that protrude through slots in the case and are bent over to secure it. Straightening these tabs without breaking them is nearly impossible. The previous owner had broken three of the tabs, and I ended up with only one intact by the time I was done.

I was able to make a very neat repair on the bezel. First, remove the bezel and clean it. Note that the bezel fits down into the clock case approximately 3/16". Take a short piece of one inch wooden dowel and vice it down in a horizontal position. Hang the bezel on it and dimple the remnants of each tab with a center punch. Leave the bezel hanging on the dowel, and carefully drill 1/16" holes into each tab. Cut an appropriate number of six inch long pieces of fine stainless steel wire (I used .020 aviation safety wire) and loop them through the holes. Lay the bezel and glass on a padded surface and place the clock case over it, bottom side up, then pull the wires through the slots in the case and twist them around wire brads to secure them. This repair is undetectable, and does not damage the bezel. I had considered silver soldering new tabs onto the bezel, but this would have required a re-plating job.

As for the Western Union clocks, they are much scarcer, and I have seen at least ten models. All are gorgeous. I have one with a dun brown metal case. There isn't much to tell about them except that they are easily repairable - I have a clock repairman friend that has worked on lots of them. If you get it worked on, I suggest finding a repairman with previous experience. The self winding mechanism is a little strange, and there are at least two versions of it.

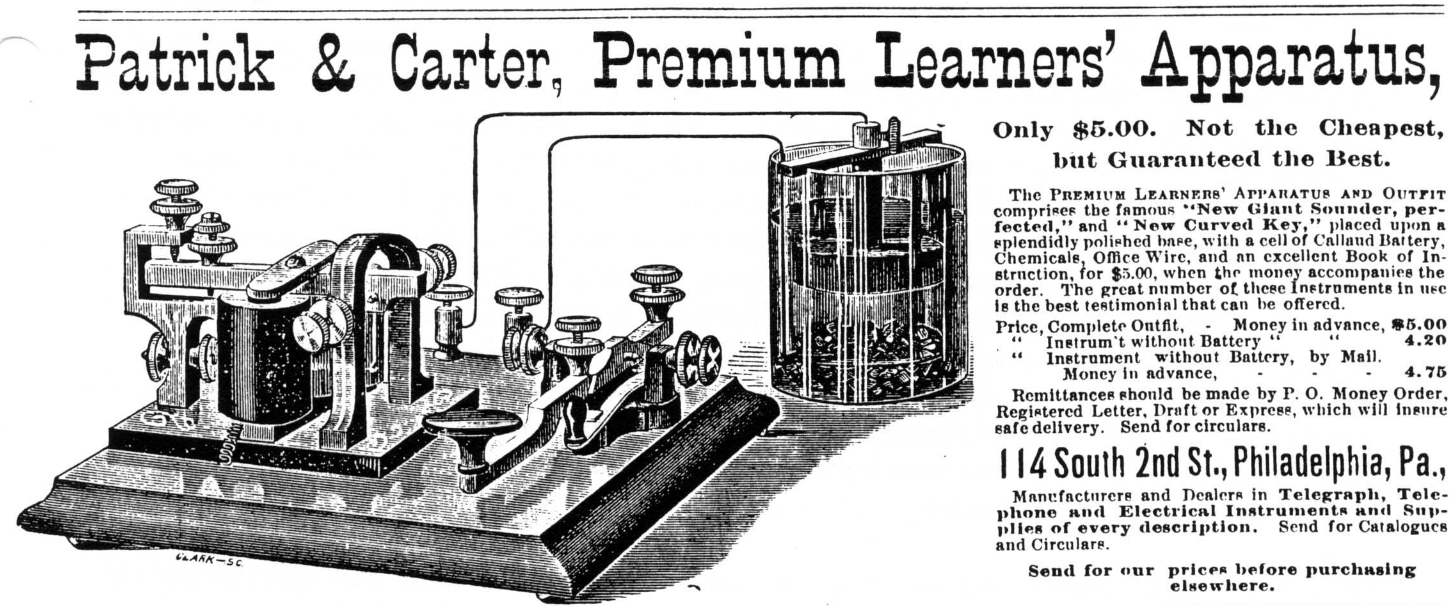
> **Steve Massey:** *I have the Bunnell Radio Sideswiper 1923-1925 according to Pete Malvasi. He stated that this key is very RARE. With what guys have offered me for it in trade I kind of believe him. Can you ask in your next newsletter who has them? I'm just wondering how many are around, since there are not serial numbers on these keys. I'm sure you know the key I'm talking about, it's on my website under Sideswipers. (http://www.telegraph-wireless.com/pic/bunn7.jpg)*

> **Doug Seneker:** *I have run into several WWII Japanese items of late. They have an unusual method of listing dates on their manufacturer ID plates. Emperor Hirohito began his reign in 1925, and thereafter one form of Japanese year dating began. The tenth year of his reign, 1935, is year 10, 1945 is 20, and so forth. Their month-numbering is the same as ours, that is, 12 indicates December.*

The year, however, is listed first. Among my Japanese items is an acetylene-powered signal lamp dated 18-8, which means the 18th year (1934) and 8th month (August). Now, to confuse the issue further, they have a "basic" calendar which has been running for over 2500 years. Many of their military items bear a numerical designation relating to the last two digits of the year in which the item was adopted. For example, a common WWII Japanese radio was the Type 94. This means it was adopted in the year 2594, or 1934. I have a Type 92 Field Telephone/Telegraph set dated 14-1. It is, therefore, a model adopted in 2592 (1932) and manufactured in January (1) of 1939 (14). My thanks to LTC William L. Howard and Dennis Starks for this information, which has been very helpful to me, and maybe to some of you. By the way, my Email address is n0wan@sofnet.com, which was skipped on your list.

Marshall Emm: *My Simplex Auto's label says that it was made by "Leo G. Cohen" in Melbourne, Vic. A contemporary ad (supplied by Larry, VK6CP) shows them as being available from one "J.W. Layther" in Maroopna, who says he is the "Australian Representative for Leo G. Cohen." So who exactly WAS Leo G. Cohen, and why did he have an Australian representative in nearby Maroopna if he was in Melbourne? I'd also like some biographical information about K. P. Thomas, inventor of the "Automorse" made by Hitchcox Bros. in Adelaide. Pix of both of these keys at http://www.MorseX.com/n1fn .*

John Casale: *I am always mispronouncing Partrick and Carter as "Patrick and Carter." Looks like some early ads of theirs also had this problem. This one is from a copy of The Electrician. January 1883.*



Patrick & Carter, Premium Learners' Apparatus,

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The PREMIUM LEARNERS' APPARATUS AND OUTFIT comprises the famous **"New Giant Sounder, perfected,"** and **"New Curved Key,"** placed upon a splendidly polished base, with a cell of Callaud Battery, Chemicals, Office Wire, and an excellent Book of Instruction, for $5.00, when the money accompanies the order. The great number of these Instruments in use is the best testimonial that can be offered.

Price, Complete Outfit, - Money in advance, $5.00
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Remittances should be made by P. O. Money Order, Registered Letter, Draft or Express, which will insure safe delivery. Send for circulars.

114 South 2nd St., Philadelphia, Pa.,

Manufacturers and Dealers in **Telegraph, Telephone and Electrical Instruments and Supplies of every description.** Send for Catalogues and Circulars.

Send for our prices before purchasing elsewhere.

Also I would like to find out any information on a American Telegraph Company employee named M. Althaus. I know this is a long shot, but I thought I would give it a try.

Fons Vanden Berghen: *Re your request for information on the French telegraph maker "Beaudot". Baudot is spelled without the "e". He was not a manufacturer but invented the system. I wrote a little on him in my book/catalog on my exhibition in Brussels (see page 263/264 in last N7CFO Keyletter):*

"Jean-Maurice Emile Baudot (1845-1903) was a humble French telegraph official with little schooling. Nevertheless, he was responsible for some highly ingenious improvements that were to lead to his famous and pioneering telegraph. Baudot proposed a new code: each character comprised five elements, each of the same duration, in the course of which current or no current flows along the line. The constant impulse length made it relatively easy to apply the time-division multiplexing principle. He patented his invention in June 1874, before eventually managing to get up to six systems working simultaneously over a single line! The French administration installed Baudot devices on the Paris-Bordeaux line in 1877. The first Baudot link in Belgium was not created until 1909. Some 28 devices were in operation by 1925. The Baudot system remained popular until 1947, the year in which telex came to Belgium. The Baudot device could work even faster than the Hughes, achieving a speed of 50 words a moment."

The equipment was made by different manufacturers. The ones in my collection are made by J. CARPENTIER (Paris) and L. DOIGNON (Malakoff). You can see one of them on my photo's that Greg Raven has put on the web: http://www.cris.com/~gsraven/fons_images/fons_museum.html

As the inventor of Bakelite (your article p. 261) was a Belgian, I also wrote on him in my book:

"Leo Baekeland. We have already mentioned bakelite radios, so let us turn for a moment to the inventor of bakelite, Leo Baekeland (Belgium, 1863-USA: 1944), who went from Ghent street urchin to American multimillionaire. At the age of 17, he enrolled at Ghent University, where he received his doctorate in natural sciences in 1884 with la plus grande distinction. He departed for the US on 10 August 1899 on a combined honeymoon and study tour. On arriving in America, he was quickly offered a position at Anthony & Co, where he developed a new photographic paper in 1892, to which he gave the name 'gas-light' or 'Velox' - a brilliant invention! In 1899, he sold his process and plant to Eastman Kodak. He began to concentrate on electrochemistry in 1901. In 1905, he returned to the research with which he had been involved at Ghent University, namely the study of the reaction between phenol and formaldehyde. Older and wiser, he successfully produced three new resins in 1906, to which he gave the name Bakelite A, B and C (patented in 1907). Bakelite C is stable, does not melt, is insoluble and a poor conductor of electricity. It was put to use in hundreds of different applications, especially in electrical engineering (for a wide range of insulating components in cables and electrical devices, loudspeakers, radios, gramophone records, telephones and so on). The Bakelite Corporation, which he founded in 1922, merged with Union Carbide in 1939. Quotation from Dr Leo Baekeland: 'A wise man learns from the mistakes of others, a thinking man from his own mistakes and a fool from neither".

I do have a GURLT portable military telegraph and have seen regular ones. But unfortunately I do not have more information on this manufacturer unless that he was based in Berlin.

Tom French: *Re John Elwood's list of Fleron practice signal sets, I'd like to add model no. 1095. This is a metal-cased unit, similar in size to the later plastic items. Mine has the Boy Scout insignia on it. Tom Perera's "Telegraph Collector's Guide," mentioned in the Keyletter, is one of the most popular books we carry -- due in part, no doubt, to the value guide included in the book. You might note that the $2 shipping is for domestic sales; foreign air mail shipping is $5 to any country. A complete list of items carried by Artifax Books can be found on the Internet at: http://home.fiam.net/tfrench/artifax.htm. Our book list is there, as well as a complete index to all 24 issues of the Vail Correspondent. Back issues are still available.*

The September AWA Conference was a lot of fun as usual. It was great to see all of the regulars there from the key collecting fraternity. I think everyone found something to add to their collection. While at the Conference I went to the Museum Annex in Bloomfield to look at the McElroy MT-35 transmitter that was donated to the Association last year by Ed Patacchiola, WLMCG. It is identical to Tom Collins's transmitter (see TVC24), including the Gruen meter used on both units. The Associations's unit lacks only the cabinet enclosure. This confirms three MT-35's so far.

John Elwood: *Can you straighten me out on who is correct - Henry or Tom on the J-3 key? See Keyletter &, page 71, Perera's collectors guide, page 39, and the J-6 aircraft key on page 40.*

Dave Pennes: *I have a huge variety of sounders and relays for sale. All are clean and complete. I am selling them for $50 + postage. I also have an Instructograph for sale. It is the early wind-up model with the crank and includes 17 tapes on continental Morse with practice tapes of RR and stock market topics. It is in good shape and the price is $75 plus postage. My address is: 4606-C Santa Cruz Drive, Indianapolis, IN 46268-5354.*

By the way, all of my ATOZ bugs have the digit "1" incised on the underside in the center. This figure is ½ inch high and has appeared in all labeled ATOZ bugs that I have seen.

Dave, I checked the one ATOZ in my collection, and it has this figure. I also found a bug with the Albright label that is missing the manufacturers label that had this marking. I request that all readers dig out their ATOZ bugs and let me know if theirs have this marking so I can report on their findings in the next Keyletter.

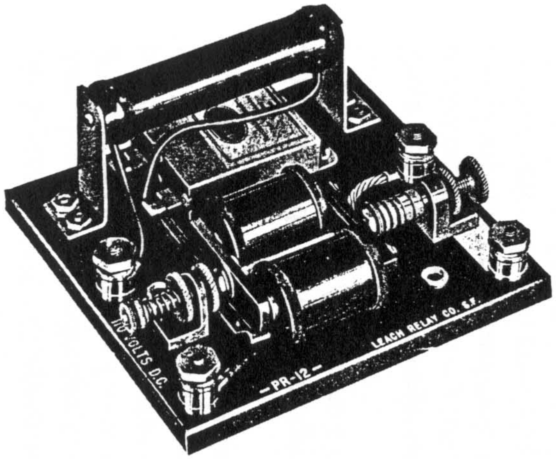
Murray Willer: *On your page 264, I note I said that in the 5-inch Aldis Lantern, a circular sleeve surrounds the lamp, and when the upper trigger is actuated it moves the sleeve forward, exposing the rear of the lamp to the mirror. This is not quite correct, and I should have said that when the upper trigger is actuated it moves the sleeve* ***backward****, thus exposing the rear of the lamp to the mirror. I must mention that I have several British Intermediate Signaling Lanterns, which are 3-inch diameter, and in these, there is also a sleeve surrounding the lamp. A switch operated by the index finger causes the lamp sleeve to move* ***forward****, exposing the rear of the lamp to the mirror. So you can see why I get mixed-up. I have listed this lantern under item V.04 in my list of Light Signaling Devices.*

Carl Volker is looking for a Les Logan 515 frame. He can be contacted at 3396 Bellemans Church Rd., Mohrsville, PA 19541. Telephone (610)926-7661.

Well, that is it for # 26. As always, I appreciate the contributions, both financially and in the form of input. Keep those cards, letters and e-mails coming - the more input I receive, the more Keyletters you will see!

Lynn

73, Lynn



PR-12 RELAY

Recommend for circuits carrying anything up to one K. W.

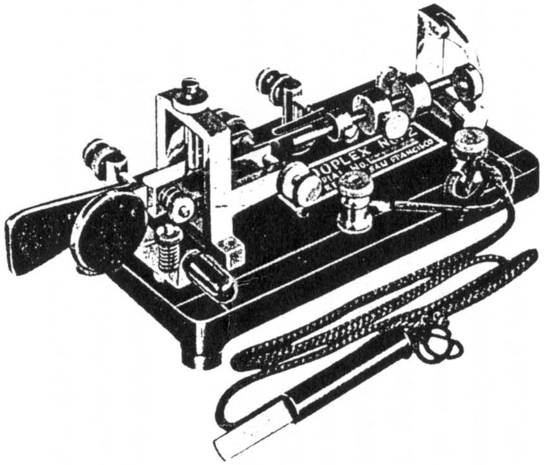
Operates on 120 volts D. C. Coil resistance 160 ohms. Resistor unit 500 ohms. Arc absorbing condenser shunted across coils—½ M. F. Copper cooling flanges on moving contact. Bakelite insulation between drive rod and coil mounting. Also between drive rod and armature. Engraved black Bakelite base 5″x5¼″x⅜″. Price............................**$18.00**

General Data on PR Relays

The "PR Relays" are all very "fast" instruments. They are designed primarily for short-wave tube transmitters and are insulated accordingly. They have three adjustments as follows: The stationary contact is mounted in the end of an adjustment screw which varies the space between the armature and the coil poles. The space adjustment varies the distance that the contacts "break." The spring adjustment is on the very end of the drive rod, and varies the tension on the movable contact. The moving element is so arranged that the contacts make a "full contact," no matter how the rest of the instrument is adjusted. There are no hinges, levers nor pivots. They have in reality, "a full floating action."

A "PR Relay" should be used in every short-wave tube transmitter to handle the high-voltage of some circuits and the high amperage of others. The ideal combination for faster, snappier and better "sending" is a PR Relay operating in conjunction with our "Speedoplex No. 2."

PIG-TAILED



SPEEDOPLEX No. 2

This is an exceptionally fine key of the vibrating type. Adjustable to all required speeds. Balanced to perfection. Our system of "Pig-Tailing," insures a perfect electrical circuit through all moving parts. We do not depend on the current to make a good circuit through the bearings and high resistance steel springs. The four PURE SILVER contacts have the highest conductivity practically available.

The vibrating spring is of exactly the right length, width thickness and temper to give the instrument plenty of "pep" and "life." There is none of that "dead" feeling in this key. The base is finished in gloss black lacquer while all upper parts are finished in polished nickel. Aside from being durable this combination finish gives the Speedoplex No. 2 a very beautiful appearance.

Weight: Ready for operation, approximately 3¾ lbs.

Price complete..**$17.00**

AUG - 1930
SEP 1930

LEACH
EQUIPMENT

✧ Relays ✧

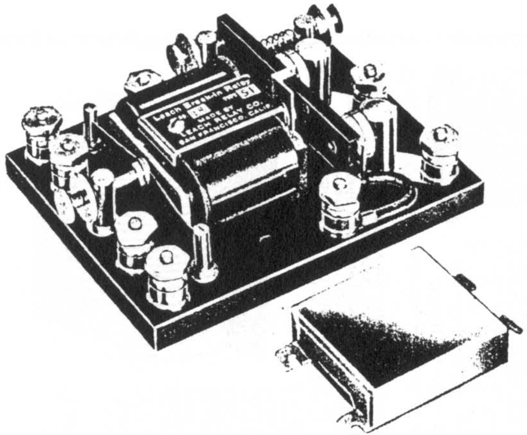
LEACH RELAY CO.

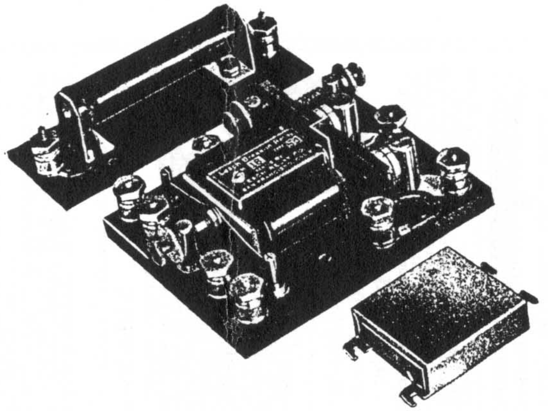
860 SO. LOS ANGELES STREET
LOS ANGELES, CALIFORNIA, U. S. A.

RADIO [illegible]
1000 SO. [illegible]
CORNER [illegible] FAMOUS RADIO CORNER"
LOS [illegible]

"The LEACH BREAK-IN RELAY"

MODEL 18





The primary purpose of this relay is to function in such a manner that it acts as an automatic antenna switch and power relay. The two being combined into one unit in a very novel and extremely practical manner. When the power contacts (which control the current in the main keying circuit of the transmitter) are open, the receiver is always connected to the antenna. Just before these power contacts close, for the next dot or dash, the antenna lead is DISCONNECTED from the receiver and completes the transmitter circuit. This action is extremely fast and even though the relay be connected to an automatic sending machine operating from 75 to 100 words per minute, the receiver will always be connected in the circuit between every dot and dash and out of the circuit while these characters are actually "going-out." THIS MAKES IT POSSIBLE TO "LISTEN IN" WHILE SENDING. One antenna being used for the entire layout.

The advantages of such a system are very apparent and are briefly described as follows: Let us consider the old style system first. Suppose two stations NOT equipped with LEACH BREAK-IN RELAYS are exchanging traffic, one receiving from the other. Now suppose this receiving operator gets interference from some source such as heavy static, other stations, local disturbances or weak signals. With this old Hand Antenna Switch System it would not be possible for him to stop the sender. It would be necessary for him to wait until the sending operator finished his message (possibly several of them) and then ask for a repetition of parts here and there, or possibly of all that was sent. The sender then goes ahead cluttering up the ether with a lot of wasted time and energy, keeping wave bands crowded, using the transmitter much more than is necessary, delaying and interfering with other stations, traffic, etc.

Now suppose these two stations are equipped with LEACH BREAK-IN RELAYS. The interference comes along,—it is NOT necessary for the receiving operator to wait at all. All he has to do to stop the sender is to hold his key down a second or so and give the signal "BK". The sender would hear this between his own dots and dashes and stop sending immediately, to be advised ON THE SPOT, whether to wait until the interference was over or where to begin sending again. Neither of these operators would have thrown a single switch in sending back and forth as this is all taken care of automatically by the LEACH BREAK-IN RELAY.

Think what all this means during heavy static, or interference from other sources. It means that traffic gets "through" rapidly, accurately and in less than half the time usually required with the old system.

This LEACH BREAK-IN RELAY may be operated from a small Morse Key, SPEEDOPLEX No. 2, or any similar transmitting device. It is very "FAST" and will not "lag" nor "drag." It is designed for tube or spark transmitters up to and including 2 K. W.

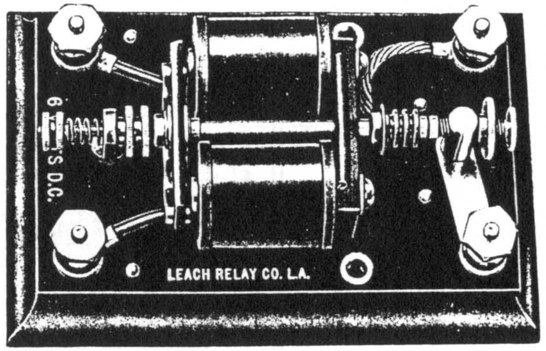
⅜" black bakelite base 4"x5". Highly polished nickel finish. Two pair ⅝" and one pair ⅛" silver contacts. Hard-rubber shelled coils.

Model 18—

Type S-1 complete, operates on 6 volts D. C.
Price—**$23.00**

Type S-3 complete, operates on 120 volt D. C.
Price—**$25.00**

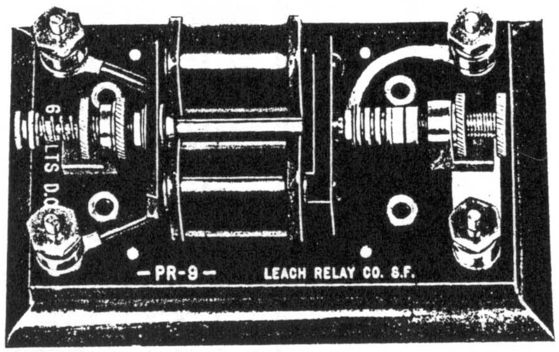
(Wiring diagram furnished with each relay)



PR-5 RELAY

Recommend for circuits carrying anything up to 250 watts.

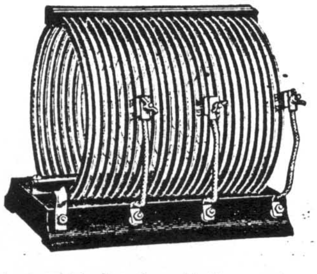
Lacquered brass finish, operates on 6 volts D. C. coil resistance 7.5 ohms. ¼" PURE SILVER contacts. Copper cooling flanges on moving contact. Bakelite insulation between drive rod and coil mounting also between drive rod and armature. Main base 3/16" Bakelite 3"x5". Cedar sub-base nicely beveled and finished in gloss black lacquer. Over-all measurements 3¾"x5¾"x1⅞". Price..**$9.00**



PR-9 RELAY

Recommend for circuits carrying anything up to one K. W.

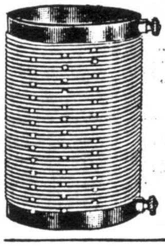
Polished nickel finish, operates on 6 volts D. C., coil resistance 7.5 ohms. ⅜" PURE SILVER contacts. Copper cooling flanges on moving contact. Bakelite insulation between drive rod and coil mounting, also between drive rod and armature. Carefully engraved black Bakelite base 3"x5"x3/16". Cedar sub-base. Beveled edges. Gloss black lacquer finish. Over-all measurements 3¾"x5¾"x1⅞". Price........**$12.00**



Oscillation Transformer Radio Corporation UL-1008

This Transformer is designed especially for use in tube transmitting circuits. It is also adaptable for use as an auto transformer of spark set oscillation circuits. Consists of 25 turns of nickel plated copper strips with rounded edges. Offers very little resistance to radio frequency currents, thereby assuring maximum radiation output of low power C. W. transmitters. Securely mounted on wood base which has four binding post connections, three of which have flexible conductors and clips for selecting pick off points on the coil. The clips are easily attached or removed from coil, but when tightened will hold their positions and can not be accidentally moved or detached. All metal parts nickel plated. Polished, black finished base. Size, 7⅞ by 6¼ by 9⅜ inches. Shipping weight, 7 pounds.

563 W 7035.. **$9.00**



Acme C. W. Inductance

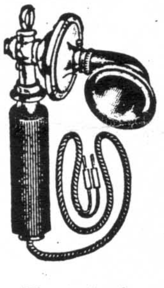
A rugged, flexible and efficient C. W. Inductance. Consists of 30 turns of No. 12 B. & S. copper wire wound on a 5-inch slotted bakelite tube. Taps are brought out at each turn in the form of studs rigidly fastened to the wire and held in place by means of bakelite strips. Five insulated terminals for fastening to connecting wires are supplied. These make a rigid, positive radio frequency contact. Five separate connections may be made on the inductance, each one capable of being varied one turn at a time while the tubes are excited and in operation. Shipping weight, 5 pounds.

563 W 7037.................... **$7.48**

Acme Grid Coils

For use in circuits which require a Grid Coil. Consists of 25 turns of wire wound on a 4-inch bakelite tube. Tapped at fifteenth turn, making three variations possible; namely, 10, 15 and 25 turns. Fits inside of the Acme C.W. Inductance shown above. Shipping weight, 2 pounds.

63 W 7050.. **$1.86**

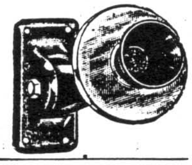


Radio Hand Microphone

Portable Handset used when transmitting speech over radio telephone. Being especially designed for radio purposes, it has a properly designed element of correct resistance and current carrying capacity for most efficient results. Fitted with 6-foot cord for connection to modulator circuit, permitting the operator to move about while transmitting. Exposed metal parts nickel plated and polished. Black corrugated handle. Hook for hanging up. Shipping weight, 2 pounds.

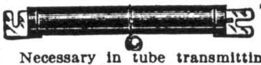
63 W 7011...................... **$5.85**

Panel Mount Radio Microphone Set



Mounts firmly on panel, has adjustable enameled pony arm with polished nickel finish microphone. Same high grade construction as above handset. Shipping weight, 2 pounds.

63 W 7012.................... **$4.25**

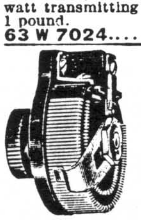


Transmitting Grid Leak

Radio Corporation UP-1718

Necessary in tube transmitting circuits. Shunted across grid condensers of oscillating tubes, they limit the potential accumulated on the grid of the tube, and thus govern the output to the antenna and also the character of the antenna oscillations. Resistance element is imbedded in a heat resisting tube that will withstand sudden and extreme temperature changes. Metal terminals for firm connections. Resistance, 5000 ohms with midtap at 2500 ohms. For use with 5-watt transmitting tubes. Size, ½ by 5 inches. Shipping weight, 1 pound.

63 W 7024.. **$1.10**



Filament Rheostat

Designed especially to regulate power tube filament current. Heat resisting molded base, 2½ inches diameter, with two concentric resistance windings which can be arranged to give four separate values of 2.5 ohms, 1.2 amperes; 3.5 ohms, 1.2 amperes; 1.5 ohms, 2.5 amperes; 6 ohms, ½ ampere. Shipping weight, 1 pound.

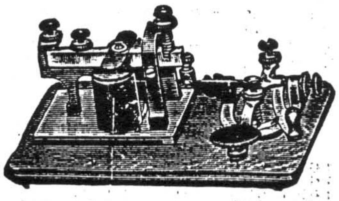
63 W 7198........................ **$2.69**

Our Special Power Tube Rheostat

A well designed, well made, moderately priced rheostat; 5-ampere capacity, 1½ ohms resistance. Base will stand heat up to 600° F. Can be mounted on panels up to ⅜ inch thick. Shipping weight, 1 pound.

63 W 7197.. **95¢**

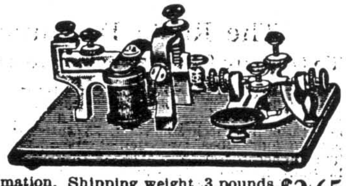
Professional Telegraph Set



Regulation instrument used by professional operators. Sounder and key mounted on polished wood base. Frame of sounder polished brass, with aluminum lever and hard rubber covered magnets. Key polished brass frame with steel lever, hard rubber knob and a circuit breaker. Strongly built throughout. Shipping weight, 3 pounds.

63 W 1730— 4-ohm combination set.................. **$3.78**
63 W 1732—20-ohm combination set.................. **3.98**

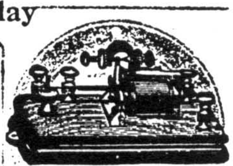
Amateur Telegraph Set



Full size key and sounder, mounted on polished oak base. A good instrument for beginners. Price includes up-to-date Operators' Manual containing Morse code, instructions for telegraphing and other information. Shipping weight, 3 pounds. **$2.65**

63 W 1715—With 4-ohm sounder.................. **$2.65**
63 W 1719—With 20-ohm sounder.................. **2.98**

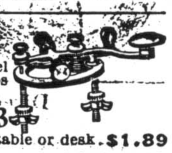
Pony Relay



A relay working in conjunction with each instrument will improve the efficiency of any telegraph system, when several instruments are connected on the same line. Also used on burglar alarm systems. Is finely finished. Made of high grade materials. Resistance, 20 ohms. Shipping weight, 3 pounds.

63 W 1745.............. **$3.10**

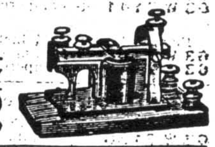
Steel Lever Keys



Steel lever and switch strap are heavily nickel plated and buffed. Black composition knobs on switch and key. Shipping weight, 1 pound.

63 W 1739—Leg key with legs to go through table or desk.......... **$1.73**
63 W 1741—Legless key to screw to top of table or desk. **$1.89**

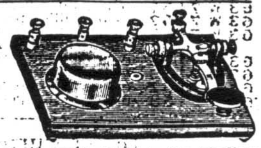
Sounders



Same as used on our professional combination set. Nicely finished and strongly built to give long and accurate service. Shipping weight, 2 pounds. **$2.30**

63 W 1735— 4-ohm sounder.. **$2.30**
63 W 1737—20-ohm sounder.. **2.50**

Wireless Practice Set



Anyone learning wireless telegraphy transmission must know the code. Send for a Wireless Practice Set and see how easy it is to learn the code. Set consists of a key and buzzer mounted on a polished wood base. Buzzer reproduces accurately the high pitched sounds of wireless code stations. Connect a dry battery to the binding posts on the set by means of a short piece of wire, press the handle of key and a buzzing sound will be produced. In a very short time your ear will become accustomed to the various combinations of dots and dashes representing different letters and numerals. Practice until you can understand the signals at the speed sent by average stations, and you have completed the most difficult part of wireless telegraphy. A very good way to learn the code quickly is to place two of these sets in separate rooms with an operator at each set, and practice sending signals back and forth. Chart included with each set. Base size, 7 by 4¾ inches. Shipping weight, 3 pounds.

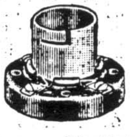
63 W 1750.. **$1.90**

Learners' Code Chart

Explains how to learn the code by the sound method, which is recognized as the correct way. With the aid of this Chart you can learn the code faster and more thoroughly. A copyrighted system that gives fast, sure results. Printed on durable celluloid in convenient pocket size. Shipping weight, 2 ounces.

63 W 1751.. **48¢**

Porcelain Transmitting Socket



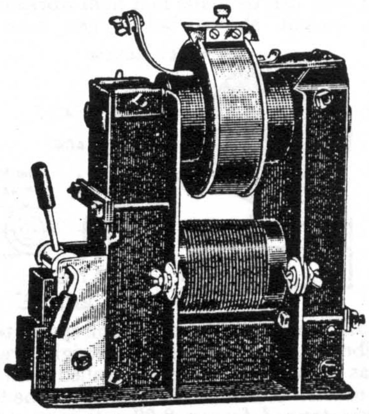
The proper Socket for transmitting tubes. Base is of porcelain, which is the ideal material for this purpose on account of its low inductive capacity and its high insulating qualities. Shipping weight, 1 pound.

63 W 7022.......................... **89¢**

1923m Montgomery Ward catalog

Spark Transmission Apparatus

Thordarson Type R Transformer



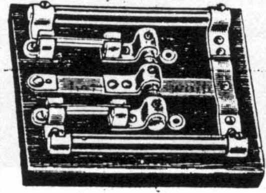
For use on 108 to 115-volt 60-cycle alternating current. Provided with adjustable magnetic leakage gap which controls primary input, giving a wide range of amperage and permitting easy adjustment. No impedance or choke coil necessary in primary circuit. This Transformer has some wonderful long distance records and has given general satisfaction to amateurs for years. Works best when used with rotary spark gap producing about eight hundred sparks per second. Shipping weights, 35 and 55 pounds.

Article Number	K.V.A.	Amperage	Sec. Volts	Each
563 W 630	½	1 to 6	10,000	**$18.90**
563 W 632	1	2½ to 14	25,000	**34.20**

Thordarson Type RS Transformers

This type Transformer differs from the well known model shown above, in that it does not have the adjustable magnetic shunt. All other features of sturdy, compact construction and correct electrical characteristics are the same. For use on 105 to 120-volt 60-cycle alternating current.

Article Number	K.V.A.	Sec. Volts	Shipping Weight	Each
563 W 633	¼	8,000	15 pounds	**$ 9.00**
563 W 635	1	25,000	35 pounds	**25.65**

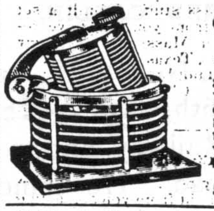


Kickback Preventer

Mahogany Finished Base

Prevents high frequency surges from discharging back into power line. A necessity when power transformer is supplied from city mains. Two 1000-ohm resistance rods. Mahogany finished base. Connections are of strip copper. Shipping weight, 4 pounds.

63 W 5358.........**$3.80**



Commercial Type Oscillation Transformer

Designed to give wave ranges both above and below 200 meters. Solid copper windings on formica supports 10½ inches diameter. Primary of six turns No. 3 wire. Secondary is 6½ inches diameter of twelve turns No. 5 wire. Mahogany finished woodwork. Two helix clips included. Shipping weight, 26 pounds.

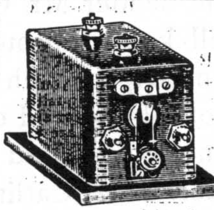
563 W 648................**$8.65**

Variable Transmitting Condenser

Oil Immersed

An oil immersed variable Condenser for use with all makes of transformers up to 1 kilowatt, 25,000 volts. Phenol fiber dielectric, corrugated aluminum separators allow circulation of oil, which is very effective in keeping down heating. Flat aluminum sheet electrodes with rounded corners. Variable in ten steps of .0009 mfd. each from .0018 mfd. to .009 mfd. Especially designed to prevent corona losses and brush discharge. Carefully made to give long and exacting service. Oil included. Shipping weight, 35 pounds.

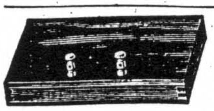
563 W 620........................**$22.75**



Wireless Spark Coils

These Coils are carefully constructed and operate successfully on either dry cells or storage batteries. The vibrator is of excellent construction and gives a clear, even tone. The necessary primary condenser is enclosed in the base and is of correct size for proper operation. Properly adjusted, the ½-inch coil has a sending range of from 2 to 5 miles; the 1-inch coil, 5 to 10 miles. Amateurs will appreciate the efficiency of this moderately priced spark coil. Shipping weights, 6 and 8 pounds.

63 W 5126—½-inch coil..............................**$4.85**
63 W 5127—1-inch coil..............................**6.95**

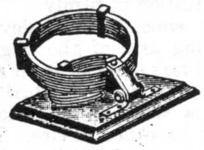


Spark Coil Transmitting Condenser

Designed for use with spark coil sets. Dielectric of five 5 by 7 photo plates. Mahogany finished case. Permits working on 200 meter wave. Shipping weight, 3 pounds.

63 W 5348...............................**$1.28**

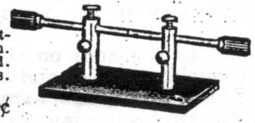
Murdock Oscillation Transformer



Permits sharp tuning on 200 meter wave. Can be used on sets up to 1 kilowatt primary and secondary windings of edgewise wound copper ribbon. Coupling varied by hinge. Ruggedly built to withstand hard, constant usage. Very efficient part for amateur sending stations. May be used for C. W. transmission. Shipping weight, 8 pounds.

63 W 5155...................**$1.95**

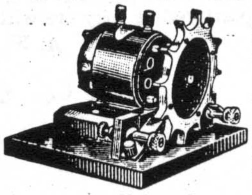
Zinc Spark Gap



For use with spark coil transmitters. Base is molded composition. Metal parts are plated and polished. Can be used with coils up to 4 inches. Shipping weight, 2 pounds.

63 W 5350...................**89¢**

Improved Model Rotary Spark Gaps

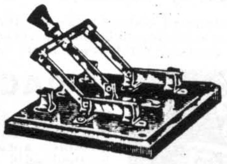


Flat, pure copper stationary electrodes and cast aluminum rotary electrodes avoid pitting. Width of break is adjustable. Strong breeze generated by rotary electrode quickly quenches spark, thereby allowing transmission of wave of low decrement. All conducting metal is mounted on formica. Easily handles 40,000 volts without endangering motor windings. Constant, steady speed. Binding post connections on motor and stationary electrodes. Ship. weight, 10 pounds.

563 W 5142—Size ½ kilowatt; 1/20 horse power. Universal motor. For 108 to 115-volt current. Speed, 4000 revolutions per minute.................................**$11.95**

563 W 5143—Size 1 kilowatt; 1/12 horse power. Universal motor. For 108 to 115-volt current. Speed, 5000 revolutions per minute.
.................................**$14.95**

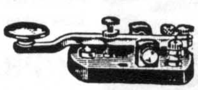
New Style Antenna Switch



A large, sturdy, well built change over switch, suitable for use on sets up to 1 kilowatt. Mahogany finished base. Improved support, copper blades. Fitted with third blade to disconnect receiver when sending. Our price on this switch shows you a considerable saving. Quick, easy operation. Shipping weight, 3 pounds.

63 W 5114...............**$2.48**

Standard Wireless Key



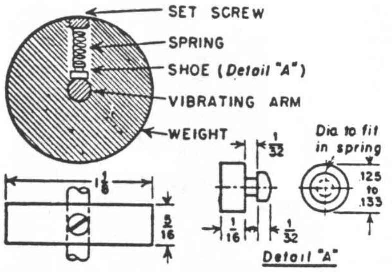
Made for radio work, for either spark or C. W. Base lever and supports made of heavy brass in lacquered gold finish. Extra large, durably hardened contact points. New style knob. Shipping weight, 1 pound.

63 W 5352....................................**$2.48**

A "Bug" Weight With a Purpose

Years ago I became disgusted with loose weights on semi-automatic transmitting keys ("bugs" to most of us) and after considerable experimentation I arrived at a solution to the problem in a self-locking weight that can be made in a ham workshop.

The weight shown below has been satisfactory with "bugs" using an average spring tension on the vibrating arm. After the weight was turned down as shown in *a* a hole was drilled from one edge to the center with a No. 29 drill. Then the top of the hole was tapped for an 8-32 setscrew so that the screw will be flush with the periphery of the weight when turned in firmly.



The shoe, or the device which bears on the vibrating arm of the bug, is turned down or filed (from brass stock or from a bit of 1/8th-inch welding rod) as shown in *Detail A*. The small knob fits inside a small spring taken from an old cigarette lighter or other device. The spring is adjusted so that it is about 1/4th.-inch long or just long enough to cause the shoe to press firmly against the bar. A cutaway view of the assembled weight is also shown.

The device is placed on the bar, the shoe and spring assembly inserted and the setscrew put into place. Then, loose weights are a thing of the past and this weight may instantly be adjusted for various speeds and, when adjusted, will maintain its position until changed manually.

QSOs are more pleasant as the dots are firm rather than splattered as they are with loose weights.

A. W. Rose, Jr., W0AWB.

CQ 5/47

Emergency Code-Practice Equipment

Sturdily constructed code-practice equipment, combining American ingenuity with a minimum of non-essential materials to meet today's unparalleled demand for trained radio operators.

"PRAC-TO-CODE"

Self-contained, 110 volt A.C.-D.C. code-practice oscillator with built-in, adjustable, spring-type key. Beautifully finished solid oak case. Uses 2—type 36 tubes and 1—40 watt light bulb.
Postpaid; with tubes, less bulb..**$9.95**
Less tubes and bulb..............**$7.95**

"PRAC-TO-KEY"

Single lever, spring-type practice key with space and contact adjusting screws. Beautifully finished solid oak base with conveniently located terminals.
Postpaid........................**95c**

INLAND WIRELESS
THE ENGINEERING BUILDING, CHICAGO

Radio News
3/43

FRED. CATLIN,

Of the United Press, New York, was born in Great Bend, Pa., March 26th, 1848. He learned to tel graph on the Erie Railway, and worked at various points along the road. He came to New York city a quarter of a century ago, and was with the Western Union Telegraph Company over nineteen years, for twelve years a chief operator, acting in that capacity in all the divisions of that office. Mr. Catlin had charge of the sending tournament of 1884-85, and has taken great interest in these matters. As a rapid sender Mr. Catlin has great renown. He is well known throughout the land through the "Catlin Grip," which is accepted as the correct method of taking hold of a key, so that the best results can be obtained with the least fatigue to the operator. Mr. Catlin has been with the United Press for the past four years.